

*Perspective*

## History of Cell Biology

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### DESCRIPTION

Cell biology sometimes referred to as cellular biology is the study of cell structure and function is known as cell biology, and it is based on the idea that the cell is the most basic unit of life. Concentrating on the cell allows for a more in-depth understanding of the tissues and organisms that cells make up. Some species have only one cell, whereas others have large cooperating groups of cells. Cell biology is concerned with the form and function of a cell, from the most basic traits shared by all cells to the unique, highly complex tasks exclusive to specialised cells.

Cells are researched using a variety of methods, including cell culture, various types of microscopy, and cell fractionation. These have enabled for, and are currently being utilised for, discoveries and study into how cells work, ultimately leading to a better understanding of bigger creatures. Understanding the components of cells and how they function is crucial to all biological sciences and is also required for biomedical research in sectors such as cancer and other disorders. Genetics, molecular genetics, biochemistry, molecular biology, medical microbiology, immunology, and cytochemistry are all linked to cell biology research. With the introduction of the compound microscope in the 17th century, cells were visible for the first time. After viewing a cell-like structure on a piece of cork in 1665, Robert Hooke used the term "cells" to describe the building blocks of all living organisms. However, the cells were dead and gave no indication of the true overall components of a cell. Anton Van Leeuwenhoek was the first to examine live cells in his study of algae a few years later, in 1674. All of this came before the cell hypothesis, which argues that cells make up all living things and that cells are the functional and structural unit of organisms. In 1838, plant scientist Matthias Schleiden and animal scientist Theodor Schwann observed live

cells in plant and animal tissue, respectively, and came to this conclusion. Rudolf Virchow added to the cell hypothesis 19 years later, stating that all cells arise through the division of pre-existing cells. Despite its widespread acceptance, various investigations have cast doubt on the cell theory's veracity. Viruses, for example, lack membranes, cell organelles, and the ability to self-replicate, which are all common features of live cells. Robert Hooke was the first to discover and name the cell in 1665. He noticed that it appeared oddly similar to cellula, or little apartments inhabited by monks, and so the name. However, what Hooke truly saw under the microscope were the dead cell walls of plant cells (cork). Micrographia published Hooke's description of these cells. Scientists have debated whether viruses are living or not, as well as whether or not they agree with the cell idea.

Modern cell biology study examines several methods for cultivating and manipulating cells outside of a living organism in order to advance human anatomy and physiology research and to develop drugs. The methods for studying cells have progressed. Scientists now have a greater grasp of the structure and function of cells because to advances in microscopy, methods, and technology. The following is a list of some of the most common cell biology procedures.

**Culture of cells** Rapidly growing cells on media enable for a large number of a specific cell type to be studied in a short length of time. Cell culture is one of the most important techniques in cellular and molecular biology, as it provides good model systems for investigating cell physiology and biochemistry (e.g., metabolic research, ageing), pharmacological and toxic chemical effects on cells, as well as mutagenesis and carcinogenesis

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